

REMARKS

In the Office Action, claims 1-9 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-6 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shaw (U.S. Pat. No. 3,924,690) in view of Beccu et al. (U.S. Pat. No. 6,062,322). Claims 7 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shaw in view of Beccu et al. as applies to claim 1, and further in view of Harrinton (U.S. Pat. No. 5,131,476).

In response to the informalities noted by the Examiner, claim 3 has been cancelled and claims 1, 2 and 4-9 have been amended.

The Shaw patent shows means for forming an air cushion in advanced positions when inlet ports 17 are covered by piston parts. This appears to result in the disadvantage that the piston cannot be driven rearwardly unless it is displaced back to a position wherein inlet ports 17 are (at least partly) uncovered again. Another disadvantage is that the dead volume of the formed air cushion is rather extensive, which results in less effective cushioning.

In the Beccu et al. patent, the hammer end seals with a "bottom chamber seal member" 36 in order to form a peripheral, annular bottom chamber 26a, 26b, which

functions so as to provide return pressure on the piston. There is thus no pressure chamber formed between the piston, a drill bit upper end and a drill bit bushing.

One of ordinary skill in the art would not derive teachings from Beccu et al. in order to modify Shaw. Firstly, there is nothing in either reference implying such a combination. Secondly, since in Beccu et al. the sealing effect is used to establish a peripheral chamber, such a combination would point away from the invention, where a chamber inside the drill bit bushing is established.

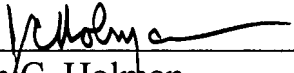
Since the present invention, according to amended claims 1 and 9, is non-obvious, also dependent claims 2 and 4 through 8 are non-obvious. Harrington is even more distant from the invention than Shaw and Beccu et al.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

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